Colonial Signals of Port Jackson

by Ralph Kelly

Abstract This lecture is about the role signal flags played in the early colonial life of Sydney. I will look at some remarkable hand painted engraved plates from the 1830s and the information they have preserved as to the signals used in Sydney Harbour. Vexillological attention has usually focused on flags as a form of identity for nations and entities or symbol for a belief or idea, but flags are also used to convey information. When we have turned our attention to signal flags, the focus has been on ship to ship signals[1], but the focus of this paper will be on shore to shore harbour signals and the unique system that developed in early Sydney to provide information on shipping arrivals in the port. These flags played a vital role in the life and commerce of the colony from its foundation until the early 20th Century.

Figure 1. naval signals[1]

The Nicholson Chart

The New South Wales Calendar and General Post Office Directory 1832 included information on the Flagstaff Signals in Sydney, including a coloured hand-painted engraved chart of the Code of Signals for the Colony.[2] This chart was prepared by John Nicholson, Harbour Master for Sydney's Port Jackson.[3] It has come to be known as the Nicholson Chart and is one of the foundation documents of Australian vexillology.[4]

The primary significance of the chart to vexillologists has been that this is the earliest known illustration of what was described on the chart as the N.S.W. Ensign, though it later became known as the Australian Ensign and then the Federation Flag. The chart showed other "proposed miscellaneous flags" for N.S.Wales and the South Seas".[5] But that was just a small corner of the chart.

The Nicholson Chart mainly consisted of drawings of Marryat's signals and "Colonial Signals" for use in Port Jackson; the plate was engraved and hand coloured. Nicholson's colonial signals were rectangular flags and pennants with basic patterns arranging the colours blue, red, yellow and white. His system assumed one, two or three flags being hoisted from the signal mast to convey information about ships entering the harbour. If the vessel was a warship, then the top signal was either the Royal Navy's white ensign or, if it was a foreign warship, then a signal flag with horizontal stripes of blue, white and red.

Figure 2. Nicholson Chart 1832 (reprint)

Figure 3. N.S.W. Ensign

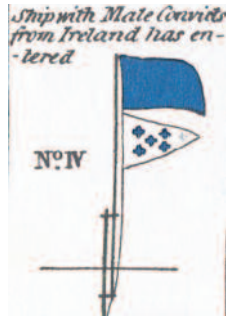Figure 4. Schooner Signal
Ball = from North

Figure 5. Ship signal and
No.5 Signal

For all ships, there were 16 rectangular signals proclaiming the size of the vessel (ship, brig, schooner or cutters & sloops) and its ownership (strangers, government colonial, private colonial or foreigners). The signal for a foreign cutter was not used, and was replaced by a yellow and blue checked flag to designate a steam vessel.[6] The strangers category was used initially when the ship was approaching, and replaced by one of the other three categories when it had been identified.

When a ship was sighted approaching the harbour entrance, a signal ball was hoisted on the north yardarm (right hand side as seen from town) if the vessel had come from the north, and the ball was hoisted on the south yardarm (left) if the vessel was approaching from the south. If there were two ships approaching from opposite directions, then both balls were used and the top flag designated the ship from the south. After the vessel entered the harbour, the balls were lowered and the information about the vessels origin and cargo obtained from the pilot was conveyed by the addition of numerical pennants. For example, the number 5 pennant signified the vessel had male convicts aboard and had come from Ireland. A vessel from New Zealand was indicated by the number 26 – a yellow over blue pennant above a blue and yellow striped pennant. If the vessel had come via Van Diemen's Land, then a ball was hoisted directly under the numerical pennants.

There was a pattern to the signals. The vessel size was indicated by flags that were either blue (plus white), white (plus red), red (plus yellow) or yellow (plus blue) in declining size. Stranger signals were plain coloured, though the red and yellow flags were pierced with squares to improve colour recognition. The Government Colonial flags had crosses and the private colonial flags had vertical divisions. The foreigners had diagonals or squares.

The meaning of the numerical flags is contained in the Appendix. For vessels from England, and Ireland, separate signals indicated the presence of male or female convicts, and for vessels from London, Liverpool and Ireland whether there was a cargo of merchandise or not. The other places of origin included Europe other than the United Kingdom, various Australian ports and the other trade routes. No vessels from North America were expected other than whalers, as any ships from the East Coast would be expected to stop at the Cape of Good Hope and the West Coast had not yet been settled.[7]

This code of signals therefore was fundamentally different from the signal codes that were being developed for the Royal Navy and merchant shipping. The NSW colonial signals had a limited purpose – to identify the presence of a ship about to arrive in the port and to provide basic information as to its size, where it came from and its cargo. The signals did not need to be able to secretly communicate the Admiral's orders, or carry on a conversation between merchant ships. The elaborate code books with their thousands of words and sentences expressed as flags representing three or four numbers or alphabet letters were not needed. The code of signals was simplified to a recognisable set of 14 flags and 12 pennants used initially to represent 29 ports of origin. The system was so simple but useful that many of the residents of Sydney in the 19th Century learned to read the signals and respond to their messages.

Proceedings
of the

25th International
Congress of Vexillology

Rotterdam, The Netherlands 4-10 August 2013
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Port Jackson Signal Stations

Sydney was founded in January 1788 on a small bay about 9 km inland from the entrance to Sydney Harbour: a large inlet named Port Jackson.[8] The entrance to the harbour is flanked by North Head and South Head, elevated sandstone ridges that end in headlands. Shortly after the colony's establishment at Sydney Cove, a party of marines led by Captain John Hunter was sent to South Head to set up a lookout, and on 10 February 1790 a flag was raised on the makeshift flagpole to indicate the arrival of the ship *Supply* from Norfolk Island.

Figure 6. Port Jackson 1832

On 3 June 1790 the joyful cry of "the flag's up" resounded through the settlement to announce the long awaited arrival from England of the five ships of the Second Fleet with provisions, mail and about one thousand male and female convicts. In September 1790 a 26 feet (11 metre) stone column was erected to alert ships to the location of the entrance to the settlement. The original flagpole was replaced in 1792 by a 60 feet pole (18 metre), plus the 130 feet elevation of South Head (40 metres), which allowed the flags to be visible 8 kilometres away in Sydney Town. In 1794 an iron tripod "fire basket" was built to serve as a beacon for ships approaching the harbour entrance at night.[9]

Initially the settlement was largely dependent on the arrival of supplies on transport ships from England, with food and merchandise competing with space for convicts. The British East India Company held a monopoly and trade with foreign ships was officially prohibited for British colonies.[10] However, gradually American ships and Bengal-based ships began to visit Sydney with speculative cargoes of merchandise.[11] Whaling vessels began to call at Sydney for water and fresh provisions and a few ships were built or refitted for coastal trading. By 1799 Harbour regulations were introduced and a register of shipping arrivals commenced. Sydney was being transformed from a penal settlement to a port and outpost of commerce with an average of 25 ships visiting each year in the early 1800s.[12]

Figure 7. India ship Mellish entering Sydney Harbour

When convict transports or whalers arrived, the locals took to the water in small boats to sell fresh fish and vegetables that were luxuries after months at sea, or to find acquaintances or relatives in the convict cargoes. The town's merchants looked forward to what the sea might deliver.[13] In the early days of the colony imported goods had been required to be sold to a cartel of army officers and government officials[14] but from 1803 traders began to construct private wharves and warehouses and most shopkeepers were entirely dependent on the ship's cargoes. In 1813 the East India Company shipping monopoly was lifted and exports of wool commenced,

Figure 8. View of Sydney Cove, 1802r

which together with timber and whale oil provided a back-load for ships trading between Sydney and England. Shipping had become a vital part of the colony's commerce, and early news of each ship's arrival was eagerly sought, for it represented opportunities for trading and employment on the wharves.

Figure 9. South Head Signal Station 1826

Figure 10. Semaphore Telegraph, Positions of the Vanes, 1822
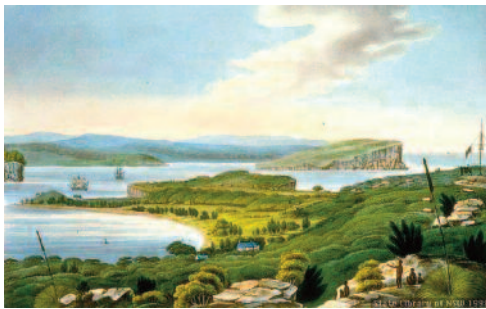
Figure 11. View of the Heads at the Entrance to Port Jackson by Joseph Lycett, 1824

Figure 12. South Head Signals, 1827 (reconstructed from description)

In 1822 a tall semaphore mast was constructed on South Head with a total of 48 positions of the vanes possible.[15] In 1823 a similar semaphore telegraph was constructed at Fort Phillip in Sydney and extended in 1824 with a relay station at One Tree Hill (Brush Farm, Eastwood) and signal station at Mays Hill, Parramatta where Government House was located.[16]

An 1826 engraved lithograph shows South Head Signal Station - a hut with an attached semaphore and a small freestanding flagpole, a Union Jack aloft, and a lookout with telescope seeking approaching ships.[17]

The primary purpose of the semaphore was to signal the arrival of ships into Port Jackson and information about their origin and cargo and to convey instructions to the pilots stationed at the harbour entrance. Information was conveyed by the position of the wooden vanes, with the 48 possible positions corresponding to numbers. The system used had been developed by Sir Home Popham in England as recently as 1815 and had been permanently deployed by the British Admiralty in 1820.[18] The numbers represented the description of the vessel; such as 3 denoted a schooner, 17 the vessel approaches the heads and 23 the vessel will probably get in before night. Another set of messages was associated with the semaphore from Fort Phillip to South Head, such as "1 – Is there anything in sight?" And "43 – the senior pilot is required at Sydney immediately".

In addition to the semaphore, signal flags continued to be used to communicate between ships and the pilots and to inform vessels about tides and conditions in the river. In March 1826 an "Old Skipper" wrote to the Editor of *The Australian* complaining about the deterioration of the signals at the entrance to Newcastle Port. The mariner recounted how his arrival at Newcastle had not been signalled and was informed by the pilot that "most of the flags were worn out, and those that remained were nearly so – and that there were no means at the settlement of making any to replace them."[19] The mariner's warning of the risks to vessels from a lack of signals came to pass in December 1826 when the sloop *Elizabeth* came close to sinking due to the lack of the usual signal forbidding vessels approaching the harbour on an ebb tide, because all the signals had worn out.[20]

Port Jackson Signal Codes

In response, in April 1827 six new signals were adopted for South Head to denote the approach of vessels.[21] The signals were:

1. A British blue ensign – a man-of-war
2. A plain yellow flag – a ship
3. A yellow flag with a red St George's Cross – a Brig
4. A yellow flag with a blue square in the centre – a Schooner
5. A pennant divided half yellow and half blue – a private colonial vessel
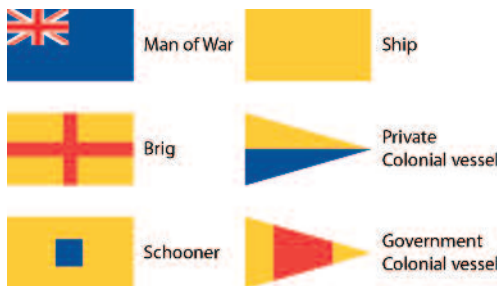6. A pennant red with the extreme ends yellow – Government colonial vessel

After the vessels had entered the heads, the signal was changed to a plain red flag indicating that the pilot was on board and if a prison ship, with a ball underneath. These signals, created by Harbour Master John Nicholson, were consistent with the traditional 18th Century approach to flag signalling – the use of different signal flags to denote specific instructions, though the flag meanings used by Nicholson were
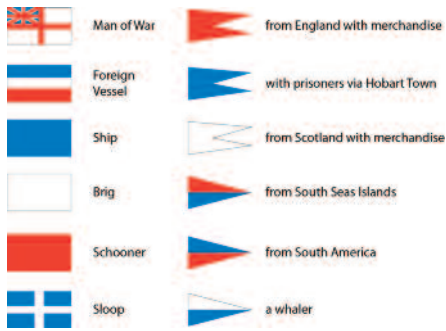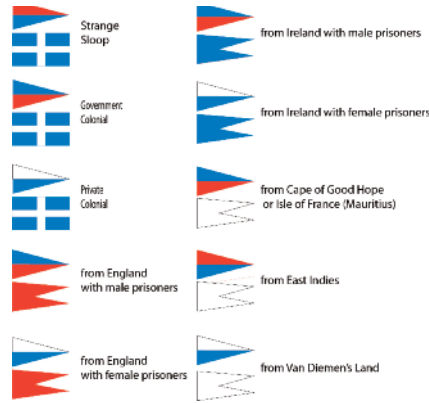
Figure 13. South Head Signals, 1828 (reconstructed from description)

Figure 14. Code of Signals in Australian Almanack, 1829-31

Figure 15. 1829, Numerals

unique to Port Jackson shipping.[22]

On 10 June 1827 a more extensive set of signals was introduced in Newcastle. Flags 1, 2 and 3 were retained, but the others were varied, the range of ship types increased and new signals were created to provide instructions for mariners, such as flag 11 – a blue flag pierced with a yellow square – stand off to sea, it is not safe to approach the harbour.[23]

From January 1828 a new Code of Signals was adopted in Port Jackson.[24] These signals were different to the Newcastle signals. The system was based on four coloured flags (blue, white, red and blue with white cross), three burgees (same plain colours) and three pennants (red & blue, blue & red and white & blue). The type of vessel was described by the flags – blue for ship, white for brig, red for schooner and blue with white cross for sloop. The burgees and pennants, singly and in combination were used to designate the origin of the vessels and their cargo. For example, a plain red burgee signified a vessel from England with merchandise, whilst the addition of a blue and red pennant indicated that it was a vessel from England with male prisoners.

The next year, in January 1829 the Code of Signals was further refined. The concept of describing the size of vessel was expanded to create a matrix of size and ownership, with different flags designating a vessel as either a "Stranger" (i.e. a vessel that had not yet been identified), a Government Colonial, Private Colonial or a Foreigner. The other innovation was pennants representing the numerals 0 to 9 with a substitute (enabling numbers 1 to 99) that conveyed similar information as the semaphore. John Nicholson, Harbour Master for Sydney's Port Jackson prepared a chart with the new signal flags and this was published in the *Australian Almanack 1829* – three years earlier than the "Nicholson Chart".[25]

The designs of the numerical flags was explained by Nicholson as:[26]

No. 1.   Has but one colour

No. 2.   Has two colours divided horizontally

No. 3.   Has three colours divided perpendicularly

No. 4.   Is divided into four parts coloured alternately

No. 5.   Has five small crosses, blue on a white ground, arranged like the five points on dice

No. 6.   Has six horizontal stripes, blue and yellow

No. 7.   Has seven stars on a blue background

No. 8.   Has eight perpendicular stripes, red and white (changed in 1832 to eight diagonal sections, white and blue)

No. 9.   Has St. Andrew's cross (red on yellow ground), which, with the flagstaff, is like IX (changed in 1832 to nine perpendicular stripes, red and white)

No. 0.   Is shown on the flag itself, by a white circle on blue ground

Figure 16. Admiral Lord Howe's Code of Signals, 1790

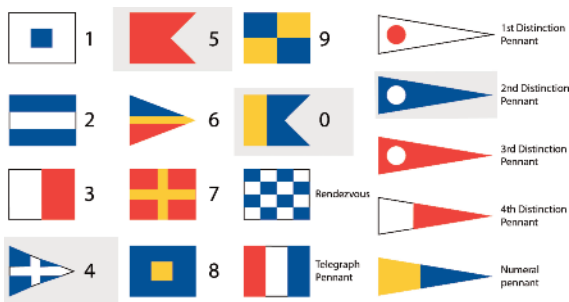Figure 17. Captain Sir Home Popham's Code of Signals, 1803

Figure 18. Captain Frederick Marryat's Code of Signals, 1817

Figure 19. Nicholson Chart, 1833 Almanack

British Signal Codes

The use of numerical flags was the basis of the improvements in Royal Navy signalling in the late 18th Century. Admiral Lord Howe had introduced the first numerical signal system in 1790, using combinations of 10 different numeral flags and substitute flags to create numbers, which corresponded to 260 specific instructions in the naval code book.[27]

This system was modified and expanded by Captain Sir Home Popham and became official for the whole of the Royal Navy in 1803.

The patterns and colours of Nicholson's flags were similar in style to Howe's signals, but the only identical flags were the descriptive flag for foreigners (Howe's No. 9), Private Colonial Cutters (Howe's No. 8) and the pennant No. 1 (Howe's flag No. 1). Popham changed the designation of Howe's signals and added some new designs. The patterns and colours of Nicholson's flags that were the same as Popham's signals were the descriptive flag for foreigners (Popham's No. 6), Stranger Brigs (Popham's No. 8) and Private Colonial Cutters (Popham's No. 9).[28]

The other precursor to the Nicholson signals was the Code of Signals for the Merchant Service developed by Captain Frederick Marryat, RN in 1817. The Marryat code also used a numerical system of ten flags, a telegraph flag, a rendezvous flag, a numeral pendant and two (later four) distinguishing pennants to indicate which of the six parts of the code was being used and up to four signal flags per message.[29] Some of the Howe and Popham signals were reused, with different meanings. The patterns and colours of Nicholson's flags that were the same as Marryat's signals were the descriptive flag for Government Colonial Ship (Marryat's No. 4 pennant), Private Colonial Cutters (Marryat's No. 0 burgee), pennant No.1 (Marryat's No. 5 burgee) and pennant No. 0 (Marryat's 2nd distinction pennant). The purpose of the Marryat Code was primarily to enable ship to ship and ship to shore communications and especially to warn of dangers to shipping.

The 1832 Nicholson Signal Code

In late January 1832 another new Code of Signals was introduced by the Harbour Master, John Nicholson. This was published in the *New South Wales Calendar and Post Office Directory* – the "Nicholson Chart". This represented a new rival publication, compiled by the Postmaster James Raymond and printed by Stephens & Stokes, publishers of the *Sydney Herald*, to the long-standing almanac issued by the *Sydney Gazette*.[30] The new chart had picked-up on some of the suggested improvements – but was essentially a continuation of the signals of 1829.

Nicholson's 1832 numerical pennants were the same as earlier used in the 1829 chart, except for the numerals 8 and 9 (though their meanings were unchanged).[31] Nicholson's 1832 chart had the same descriptive flags as 1829's, showing the size and

Figure 20. 1832, Numerals

origin of vessels. However, the 1832 flags for the New South Wales Ensign and other proposed flags were new – they were not on the chart published in the prior three years.

Following the introduction of the new Code of Signals in January 1828, the suggestion was made that it would be useful if a flag mast were to be erected at Fort Phillip to repeat the signals from South Head, so that the people of the town could be informed about shipping arrivals.[32] This was done, and the telegraph relay to Parramatta was converted to signal flags.

The Importance of Signals to the Colony

Figure 21. Fort Phillip Signal Station, 1833

The importance of the signals to the local traders was occasionally highlighted by letters of complaint in the newspapers when errors in signalling occurred and the wrong cargo or port of origin was indicated, as well as various suggestions for improvement.[33] Each day, the local newspapers reported shipping arrivals and departures, and these often included reports of a signal for a vessel sighted at sunset and expected in the port in the morning. The significance of the signals as a source of trading opportunities and foreign news was illustrated by a newspaper commentary in the *Sydney Gazette*[34]:

> "When the arms of the signal post are extended, a dozen merchants may be watching the changes with 'eager expectation'. A sail from Hobart Town dispels the pleasing illusion, and hope soon vanishes from the previously sanguine mind of the gazer and he trudges home, with the murmur on his lips 'no ship from England'. The next intelligence from the land of our fathers will be devoured with avidity. We anticipate great changes in the affairs of Europe, for some of the nations seemed to be not far from the craters of Revolution."

The combination of flags and telegraph arms was widely understood and "generated anticipation of reunion, European news, English fashion and opportunity. With each new arrival, butcher's clerks ran down to waiting watermen in a race to secure contracts to provision the vessels."[35]
One account demonstrated the excitement:

> "Our signal master has but to hoist a square blue flag with a pointed red one beneath, together with a black ball on the southern yard-arm, and a great city is immediately in a commotion. The cry of the 'the Packet's in' 'a ship from London' runs from mouth to mouth with amazing rapidity. The Post-Office window is shortly after surrounded by a host of eager inquirers after letters." [36]

An incident in 1834 provides an example of the passion that signal codes could engender. On 25 October 1834 the ship *David Scott* entered Port Jackson with a cargo of 351 free female emigrants who were being sponsored by the Committee of Female Emigration, London. There not being a signal for free emigrants, the pilot ordered the first mate to raise the signal for female convicts. The superintendent of the

females objected to this signal as it would be an insult to the female passengers, "many of whom were highly respectable". This caused a dispute between the chief mate and the ship's Captain and this led to the Captain being assaulted and an attempt made to throw him overboard. When the Captain regained control of the ship, the signal for carrying merchandise was raised.[37] It was not until July 1838 that the problem was solved by the addition of a signal to indicate "immigrants", also reflecting the changing character of the colony.[38] [39]

In 1835 the port regulations were relaxed to permit regular traders between the colonies to not require a pilot to board the vessel on entering the harbour; however this resulted in the signal station at South Head not learning of the details of the vessel. The lack of a signal with information about the cargos of arriving vessels upset the commercial traders, which resulted in two new signals. Vessels exempt from pilotage were required to hoist a signal from the time of passing through the Heads until they anchored. A vessel from Hobart Town was required to hoist a red triangular flag above a blue one, containing a white circle; and a vessel from Launceston a red triangular flag above a white one.[40]

Port Jackson had become busier – 570 ships arrived in 1836, of which only 16 were convict ships.[41] However, the colony was still remote – a sailing ship took up to 130 days to travel from England to Sydney.

From August 1836 a major change was initiated, with John Nicholson ordering that Marryat's Signals be bought into use in the colony. All vessels entering Port Jackson were required to show their number (a 3 digit number allocated by the Marryat code book) in order that it may be notified to Sydney by the telegraph on South Head. However, the system of colonial signals was also continued with the old signal flags being used at Fort Phillip in Sydney for the information of the public.[42]

Fort Phillip Signal Station

Figure 22, Fort Phillip Signal Station, Sketch by E T Blacket, 1842

Initially only the flagstaff stood on the Sydney site and a wooden hut was erected sometime before 1838.[43] The signal master used a hand-held telescope through a porthole in his cottage to decipher the shipping news from South Head. The name Fort Phillip was somewhat of a misnomer, as the fort, commissioned in 1804, was never completed, and when the signal-mast was erected in 1825, only part of the fort's eastern wall remained.[44] The area had became known as Flagstaff Hill from about 1808, when the first large flagpole had been erected, usually flying the Union Jack, rather than signals per se. The general public were allowed to walk in the grounds and it was a popular place to get above the odour and roughness of the city and enjoy the magnificent harbour views.

The signal station at Fort Phillip was rebuilt in 1848 by

Figure 23. Fort Phillip Signal Station and Observatory, 1871

Figure 24. Code of Signals 1853, 81 ports of origin
Sydney Morning Herald, 1 January 1853 [47]

Figure 25. Fort Phillip Signal Station and view of Sydney, 1864

Figure 26. Storm signal, "Easterly gale with thick weather, at Newcastle (45)"

the stonemason, Peter McBeath, to a design by the colonial architect, Mortimer Lewis, and the stone cottage remains as part of the Sydney Observatory, now called the Signal Master's cottage.[45] Two 30 metre high flagstaffs were erected in the 1850s, one to relay the signals from South Head and the other for general use, including the sending of signals to harbour pilots, and later used for storm signals.

Trade and shipping increased steadily, and from 1 February 1842 a major change was made to the Code of Signals, expanding it to 75 ports from which vessels will be signalised as having come from. Numbers 1 to 18 represented ports in Great Britain and Ireland, numbers 19 – 26 European ports, numbers 27 – 39 African and Asian ports, numbers 40 – 56 Australian ports, numbers 57 – 65 Polynesian ports, 66 – 72 the Americas and 73 – 75 miscellaneous. The actual signals were not changed and the signal flags designating the type of ship were also unchanged. The designation of the type of cargo ceased, other than to indicate a ship with immigrants or troops aboard.[46]

The colonial signal flags for Port Jackson continued in use for many years. More ports of origin were added and by 1864 all 99 possible codes were being used.[48]

However progressively, the commercial development of Sydney increased the number and height of buildings and despite raising the height of the Fort Phillip signal mast an addition 18 feet in 1839, [49] the effectiveness of the signals began to decline. In 1857 a network of electric telegraph lines began to be constructed across New South Wales, including a line from the South Head signal station to Fort Phillip. This improved the accuracy of the flag signals greatly, but it resulted in the signal stations to Parramatta being closed and the role of the Fort Phillip station becoming solely the broadcast of information on shipping for the general public.[50]

In 1869 the role of the signal stations along the New South Wales coast was changed – their primary role became to provide storm weather warnings with a new set of signals.[51] These signals were raised on a separate flagpole with two yards that crossed at right-angles to indicate the four compass directions. The signals consisted of metal shapes – a diamond-shape indicated a violent squall and a drum-shape for heavy

seas, and the location of the storm was indicated by the numerical flags of the Code of Signals.

Figure 27. *Circular Quay* by Julian Ashton, The Picturesque Atlas, 1888

The End of Signalling

In 1881 the telephone system was introduced into Sydney, which led to the signal station being declared obsolete. The raising of signal flags to inform the public of shipping arrivals was discontinued from 1 May 1912.[52]

The end of the signal station was the occasion of regret. *The Sydney Morning Herald* explained its former importance to the people of Sydney: [53]

> "For many years past the Flagstaff has been found of great benefit by all having any connection with shipping. The business section – agents, provedores, and hundreds of others, can maintain a careful lookout for vessels they may be interested in almost from any part of the waterfront, and adjacent areas of the city, and go about their business at the same time – labourers, coal lumpers, etc., living in Balmain, North Sydney, Miller's Point, and other suburbs are able to do likewise, and time their arrival at the wharfs in accordance. As a matter of fact, it is impossible to over estimate the value of the assistance the practice has been, and still is. But for the Flagstaff, very little information would reach the city at all during the day."

Figure 28. Signal station, modern view

Signal Station Restored

In 1980 the Sydney vexillologist, John Vaughan began a long lobbying effort for the restoration of the signal station and its flag masts, and by 1989 he had blueprints for the masts and financial commitments for most of the cost – but the Powerhouse Museum formed a committee and the flag mast restoration was subsumed into the larger Observatory restoration project.[54] A heritage conservation plan for Sydney Observatory and the Fort Phillip Signal Station was prepared in 1991 for the Powerhouse Museum but work was delayed until funding was eventually made available to restore the buildings in time for the 150th anniversary of the Observatory in 2008.[55] In restoring the Fort Phillip Signal Station the opportunity was finally taken to erect a replacement flag mast on the site of one of the original two flagstaffs.[56]

Figure 29. *proposed reconstruction of Signal Masts* by Austin Platt, 1988

Inaugurated on 7 June 2008, the new timber flag mast is 30 metres tall and John Vaughan persuaded the Powerhouse Museum to fly an array of flags from the substantial cross-arm. Black flags of John's design represent the phases of the moon, planets and constellations and a maximum temperature forecast is provided using the original Nicholson numeral pennants.[57] He also devised a clever circular decoder for the public to use to understand the various signals. Once again the signal mast conveys information on the weather to the people of Sydney.

It may now be dwarfed by the towering office buildings and the Sydney Harbour Bridge, but the area once known as Flagstaff Hill remains the highest natural land in the City with wonderful views of the bustling harbour.

Figure 30. Flag Decoder

Figure 31. Reconstructed Signal Mast with new signal flags, image by John Vaughan, Australian National Flag Association Newsletter, 2008

Vexillology is the scientific study of flags and their role in society. This lecture has shown how flags have been an integral part of the life and commerce of Sydney from its very foundations. Flags were not just the limited role of identifiers of nations and entities, they were a vital part of the communications system – a role that we as vexillologists have rarely looked at, until today.

Appendix – Nicholson Chart – Pilot's Reports Signals 1832

Top Flag	Second Flag		Origin and Cargo
		0	Europe, not the United Kingdom
		1	England, with male convicts
		2	England, with female convicts
		3	London, with merchandise
		4	Liverpool, with merchandise
		5	Ireland, with male convicts
		6	Ireland, with female convicts
		7	Ireland, with merchandise
		8	Scotland, East Coast
		9	Scotland, West Coast
		10	Hobart Town
		11	Launceston
		12	King George's Sound
		13	Swan River
		14	Moreton Bay
		15	Port Macquarie
		16	Norfolk Island
		17	Coasting voyage
		18	Sealing voyage
		19	Whaling voyage
		20	Cape of Good Hope
		21	Mauritius
		22	India
		23	Indian Islands
		24	China
		25	South Sea Islands
		26	New Zealand
		27	South America, West Coast
		28	South America, East Coast
		29	Discovery
		Substitute only	Left this port within the last week
		Numeral pennant only	Left this port within the last month

Footnotes

1. Figure 1 is an illustration from *The Reestablishment of the Navy,* 1787-1801, by M J Crawford and C F Hughes, Naval Historical Center, Department of the Navy, Washington, 1995, page 26.

2. A facsimile edition of the Calendar was published in 1966 by the Trustees of the Public Library of New South Wales, Sydney – this has been frequently cited in vexillological articles.

3. John Nicholson, a master in the Royal Navy, was appointed Master Attendant and Harbour Master in January 1821 with control of the Colonial Marine and Dockyard. He was responsible for the management of vessels within Port Jackson, including the movement of vessels between anchorages, and the berthing of all vessels, using pilots who took control of vessels upon entering the port. Nicholson held the post until February 1842. Some sources refer to him as Captain John Nicholson – this does not seem to be correct, as he only held the rank of Master in the Royal Navy (the navigator, equivalent to a warrant officer). A Master could be in command of a vessel, and on board he would be referred to as "Captain".   However, it is possible that he assumed the honorific after he retired as Harbour Master.

4. See "Australia's Forgotten Flag" by A C Burton, *Crux Australis,* Issue No. 36, Oct-Dec 1992.

5. Flags were drawn for N.S.W. Ensign, N.S.W. Merchant, Sydney, Polynesia, New Zealand and the Sandwich Isles. Other than the NSW Ensign, the other flags are not known to have achieved any usage, though a similar striped flag for the Sandwich Isles (Hawaii) had been adopted in 1816. The NSW Merchant flag may have been the basis for the Murray River Flag and the Van Diemen's Land Ensign. Sydney vexillologist, John Vaughan was the first person to refer to the Nicholson designs, publishing them in his 1983 chart *Flags of Australia* and he continues to actively promote a derivative design of the Sydney flag as an unofficial flag for the "Greater Sydney" region.

6. The change was made in May 1831 following the arrival in Port Jackson on 15 May 1831 of the first steamship to arrive in the colony, a paddle steamer named the *Sophia Jane.*

7. Three additional signals were however introduced in November 1833 to indicate origins of Canada, the West Indies and the United States. From January 1836, two further signals were added to signify Port Phillip (Melbourne) and Western Australia.

8. The original destination for the First Fleet was Botany Bay, which had been surveyed by Lieutenant James Cook in 1770. However, Captain Arthur Phillip found that Port Jackson was likely to be a better site for the first European settlement in Australia due to the size and natural shelter of the harbour and a better source of water. The harbour had been identified by Cook, but he did not enter the inlet, though perceiving its potential as an anchorage he named it Port Jackson in honour of George Jackson, the Judge Advocate of the Fleet, who had been a patron of Cook. Jackson subsequently became a baronet in 1791, and he assumed the name Sir George Duckett in 1797 as part of an inheritance. Sydney Cove was named in honour of Thomas Townshend, Baron Sydney (1st Viscount Sydney from 1789), the Home Secretary who had appointed Captain Phillip as Governor of the new colony.

9. A year earlier a large fire had been lit on South Head to act as a beacon for the night arrival of the *Bellona*, regarded as the first navigational light in Australia. The tripod was in use until 1818 when Macquarie Lighthouse was opened.

10. Figure 7 is painting of the British East India ship *Mellish* entering Sydney Harbour, 1830. Lithograph engraved by Edward Duncan from a painting by W J Huggins in collection of National Library of Australia (an9576808).

11. See *Sydney Harbour: A History* by Ian Hoskins, 2009, University of NSW Press, page 65.

12. Figure 8 is a hand-coloured aquatint by Langlois Printers Paris 1807 after an 1802 painting by Charles-Alexandre Lesuer, *Nouevelle-Holland … Vue de la Partie Meridionale de la Ville de Sydney.* Original print in Powerhouse Museum, Sydney (P3361).

13. Quoted from *Sydney Harbour: A History*, page 68. Imports consisted of British manufactured goods, Indian rum, Tahitian pork, South Seas whale oil and Pacific sandalwood, whilst exports were limited to local timber, fur seal skins, whale and seal oil, and repairs and provisions for whalers and sealers.

14. The cartel had begun when the newly arrived guards regiment in 1792 chartered the supply ship *Britannia* to import food, livestock and general goods from the then Dutch Cape of Good Hope. This was a breach of the British East India Company monopoly, but it was the first of many infractions. Farmers sold their produce to the cartel in return for the imported merchandise and rum, and the cartel then on-sold the farm produce to the government stores for distribution to the convicts – monopoly profits at each stage of the trade. This cartel and the use of rum as an unofficial currency led to the New South Wales Corps becoming known as the "Rum Corps".

15. *The Australian Almanack & Sydney Directory* of 1822 provided descriptions of the meaning of 47 semaphore signals. The semaphore telegraph system was recommended by Commissioner John Bigge in a letter to Governor Macquarie date 2 October 1820 based on a similar system that had been constructed in Tasmania (a flag signal system had been established on Mount Nelson in 1811 and a telegraph was added in 1820). The improved communications with Sydney enabled Macquarie's successor, Governor Thomas Brisbane (1821 to 1825) to move his principle residence to Government House Parramatta, 26 kilometres inland from Sydney (other Governors used the Parramatta as an occasional country residence until 1850). The signal line was closed in 1842 when the electric telegraph was introduced.

16. The signal relay station at One Tree Hill was found to be ineffective and the station was relocated in 1827 to Bedlam Point at Gladesville. (*The Monitor*, 9 August 1827, page 3)

17. One of a set of engravings, *Views in Australia* ca. 1826 by Augustus Earle (State Library of New South Wales, Image No. a1389001).

18. The use of a semaphore telegraphic signalling system had been a French invention, with a system developed by Claude Chappe being deployed in 1794. The Royal Navy deployed a similar system in 1795 using 6 shutters, though this was replaced in 1820 by a semaphore telegraph with two arms at different angles on a 30-foot post that had been developed by Rear Admiral Sir Home Popham in 1815. Popham in 1803 had originated the vocabulary signal flag code system that was used by Admiral Nelson at Trafalgar.

19. *The Australian* (Sydney), 30 March 1826, p 2. Figure 11 is *View of the Heads at the Entrance to Port Jackson*, New South Wales, an engraving by Joseph Lycett, published in Views in Australia 1824. Image from State Library of New South Wales (DL F82/16 pl.9).

20. *The Australian*, 6 January 1827, p 4. The deterioration in the state of the signals was probably due to responsibility for the telegraph and signal establishments having been transferred from John Nicholson, the Harbour Master to Captain Henry Gillman, the Major of Brigade (who was responsible for the batteries and ordinance stores) in January 1826. However responsibility was returned to Nicholson in February 1827, who immediately set about making significant changes to the system of signal codes.

21. *The Australian*, 27 April 1827, p 3 and *The Australian*, 2 May 1827, p 3.

22. The use of a single flag to denote a specific instruction was common in the 17th Century. A signal book in 1673 had 15 different flags, each with a pre-defined meaning, though the practice of placing these flags in different positions on the ship's masts increased the range of instructions that could be given. In 1776 Vice-Admiral Lord Richard Howe (then 4th Viscount Howe), then Commander-in-Chief of the North American Station, had simplified the signal system that had developed by reducing the number of signals and issuing to his fleet a S*ignal Book for the Ships of War*. Each flag alone, or in combination had a specific meaning.

23. *The Monitor* (Sydney), 30 July 1827, p 3.

24. *The Australian*, 4 January 1828, p 3.

25. Figure 14 is a photograph of chart in the 1829 edition of the *Australian Almanack*, which had been published annually by Robert Howe, the publisher of the *Sydney Gazette*. Advertisements in the *Sydney Gazette* confirm that the 1829, 1830 and 1831 editions included a "plate with the new Code of Signals". Howe died accidentally in January 1829 and the 1831 and 1832 editions were printed by Reverend Ralph Mansfield on behalf of the Executors of Robert Howe. The 1833, 1834 and 1835 editions were edited by E W O'Shaughnessy. From 1836 the *Australian Almanack* ceased to be published separately.

26. *Australian Almanack* published January 1829 by Robert Howe, Gazette-Office, Sydney, pages 195-196.

27. In 1782 Howe had been promoted to Admiral and was created 1st Viscount Howe of Langar, becoming the 1st Earl Howe in 1788 at the end of his term as First Lord of the Admiralty. Admiral Howe became commander-in-chief of the Channel Station in 1790 and introduced his code to the ships under his command. Captain Home Popham's 1803 changes added extra flags to enable the creation of signals that represented alphabetical letters which could be combined to create a vocabulary of 3,000 numbered sentences and phrases. Vice-Admiral Lord Horatio Nelson at the Battle of Trafalgar used Popham's code of signals in 1805 and the Royal Navy used the code with periodic revisions until 1859.

28. The numerical flags of the 1790 Howe code of signals and the 1803 Popham Code are shown at Plate XII of *British Flags* by William G. Perrin, Cambridge University Press, 1922. The secrecy of the Howe Code Book had become compromised in 1799 and the numerical designations of the codes were changed. The plain red No.1 signal had been earlier changed to a striped red and yellow flag to avoid confusion with the command flag of the Admiral of the Red.

29. In 1817 Marryat was a commander, and in 1823 he was promoted to captain. Marryat resigned his commission in 1830 to concentrate on his writings as a novelist and editor of his *Code of Signals for the Use of Vessels Employed in the Merchant Service*. The Marryat code book was divided into six sections – (1) Names of English men-of-war, (2) Names of foreign men-of-war, (3) Names of English merchant vessels (from Lloyd's list), (4) Lighthouses, ports, headlands, rocks, shoals, reefs, etc., (5) Sentences on various subjects, and (6) The Vocabulary. Initially, Marryat did not use substitute flags, with the code numbers avoiding repeat integers. Marryat published ten editions until his death in 1848, and a further nine issues were made until 1879 (being renamed the *Universal Code of Signals* from 1854). The Marryat's code was very successful and was adopted by the British and French navies and merchant fleets and translated into French, Dutch, Italian, Spanish and German. It was gradually replaced from 1857 by the *Commercial Code of Signals* developed by the Board of Trade, which used 18 flags representing alphabetical letters (excluding x, y and z and the vowels, as these could be used to create objectionable words). See *British Flags* by Perrin at pages 183-184 and *Flags at Sea* by Timothy Wilson, National Maritime Museum, Greenwich, 1986 at pages 83- 84. The Marryat signals were included in the 1832 version of the Nicholson Chart for information. Nicholson also included a set of Royal Navy signals on his 1832 chart, these were included in the Marryat Code Book, but they were not part of the Marryat system, and the meaning of the various number combinations was a naval secret.

30. The 1832 through to 1834 editions of the *Australian Almanack* included the same full Nicholson Chart as appeared in the 1832 edition of the *New South Wales Calendar and General Post Office Directory* whilst the 1835 edition had a single page version of the Colonial signals. New issues of the *New South Wales Calendar and General Post Office Directory* were published for 1833, 1834, and 1835 by Stephens & Stokes and for 1836 by Anne Howe (incorporating the former *Australian Almanack*). In 1835 the stationer and engraver William Moffitt published *Moffitt's Australian Sheet Almanack* on a single sheet, consisting of three engraved plates, which included a set of coloured signals, "by which any vessel's description can be instantly found" (reported in *The Sydney Monitor*, 6 December 1834 and *The Australian* 9 December 1834). New editions were published annually from 1836 to 1847 (but the signals

were not included in the 1837 edition). Moffitt published the *Australian Diary and Almanack* and he took over publication of the *New South Wales Calendar and General Post Office Directory* for the 1837, 1839, 1842 and 1846 editions. Yet another almanac was published from 1836 by the bookseller, James Tegg; *The New South Wales Pocket Almanack and Memorandum Book* and this contained a coloured plate of the colonial signals (the Descriptive and Numerical Flags plus signals for Newcastle and Port Macquarie and the telegraphic numbers). Further editions were published from 1837 to 1844 as *Tegg's Pocket Almanack and Remembrancer* and from 1838 he also published a sheet almanac.

31. The colours of the signal for 0 appear as red on blue in the Nicholson chart of 1832, however this is a painting error, as the *Australian Almanack* of 1833 shows the same Nicholson chart, but the central disc is white – unchanged from 1829. The Marryat No.6 signal is shown correctly by Nicholson as having a central yellow stripe, though many sources (including FOTW) incorrectly show it as a white stripe. Similarly, the Marryat numeral pennant is correctly shown as yellow and blue, though many sources (including FOTW) incorrectly show it as white and red.

32. *The Sydney Gazette and New South Wales Advertiser,* 12 December 1827, p 2.

33. Examples include *The Sydney Gazette and New South Wales Advertiser*, 7 July 1829, p 3 when a ship from Hobart Town with wheat and potatoes was wrongly signalized as a ship from England with male convicts. Another criticism, together with suggested improvements was made in a letter to the editor in the *Sydney Gazette*, 1 February 1831. The writer complained that vessels from England and Mauritius were often reported as coming from Hobart, hence not signalling the likely quality of their cargo. In the *Sydney Gazette* of 8 October 1831 another correspondent offered various suggestions, including a request that in addition to the original port, other transit ports such as Hobart be included in the signal and asking that colonial whalers be distinguished from those belonging to other ports. The same correspondent repeated his suggestions in the *Sydney Gazette* of 25 October 1831 with the added complaint of wrong signalling, such as a ship from London with merchandise via Hobart, was signalised as a ship from Ireland with male convicts – a missed opportunity for the trader.

34. *The Sydney Gazette and New South Wales Advertiser,* 15 May 1834, p 2. The role of the signals as the portents of foreign news was indicated by an editorial in the 24 May 1834 edition of the *Sydney Gazette*, which complained of a wrong signal that had raised hope of English news, via Hobart Town that led the newspaper to delay for several hours the printing of the paper, only to learn that the brig was from Launceston.

35. *Sydney Harbour: A History*, page 118.

36. *Heads of the people: an illustrated journal of literature, whims and oddities* 13 November 1847, p 35, quoted in *Observer & Observed,* Charles Pickett, Powerhouse Publishing, 2001, page 18.

37. The assault led to a prosecution in the Court of Quarter Sessions that was reported in the *Sydney Monitor* of 17 January 1835. The various witnesses provided the court with contradictory accounts of the incident and the scuffle, creating sufficient doubts as to allow the jury to declare the chief mate "not guilty".

38. *Government Gazette,* 25 July 1838, reproduced in *The Colonist,* 28 July 1838, page 3. The new signal for "Immigrants" was the numerical pennant vertically divided yellow and red being placed above the plain coloured flag that designated the vessel size. Another fine-tuning of the signals in November 1840 with the use of the numerical pennant below the ship's flag to indicate a troop ship.

39. In 1838 the population of Sydney was 23,000 with half the population being convicts, former convicts or descendants of convicts, and this proportion would significantly decrease over the next five years as a result of an upsurge of free immigrants. From the 1830s the British penal code became less harsh resulting in only the most dangerous and hardened criminals and political prisoners (Irish and protesting farm labourers) being transported to New South Wales, increasing crime levels in the colony. Free immigration was providing an

Proceedings
of the

25th International
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Rotterdam, The Netherlands 4-10 August 2013
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adequate supply of cheap labour in Sydney and an anti-transportation movement began amongst the immigrant middle and working classes. In August 1840 a British Order in Council prohibited transportation to the east coast of Australia, and the last convict ship, the Eden, arrived in late 1840 (though there was a temporary resumption of transportation of "high-class" convicts ("exiles"), with the last convict arriving in NSW in 1850). (Source: *Sydney: Biography of a City* by Lucy Turnbull, Random House, 1999)

40. Regulation published in *Sydney Gazette*, 31 October 1835.

41. *Sydney Harbour: A History*, page 84.

42. Notice to Mariners published in *Sydney Monitor,* 24 August 1836 and commentary in *Sydney Herald*, 15 August 1836, page 2.

43. Figure 22 is a watercolour by the colonial architect, Edmund Blacket from sketchbook album, 1842, State Library of NSW, No. a881015

44. The area is the highest natural landform in Sydney town and was originally designated Windmill Hill, and from about 1810 it was known as Flagstaff Hill. When construction of Fort Phillip began in 1804, a very tall flagpole was erected in the centre of the site, from which the Union Jack was flown. The hill was chosen as the site for the Sydney Observatory and after its construction in 1858, the area was re-designated Observatory Hill. Note that some contemporary sources refer to Fort Philip, but Fort Phillip has always been the correct spelling of the name, the fort being named after Captain Arthur Phillip, the first Governor of New South Wales.

45. *The Sydney Morning Herald*, 20 January 1848. Figure 23 is a photograph by the NSW Government Printing Office of the rebuilt signal station, messenger's cottage and the tower of the Sydney Observatory, 1871 in the collection of the Powerhouse Museum (d1_05276h). The Sydney Observatory was constructed on the site of Fort Phillip in 1858; with the time ball on the tower being lowered at 1 PM each day to allow the ships in the harbour to set their chronometers; a necessity for navigators to determine their longitude.

46. *The Sydney Gazette,* 11 January 1842, page 2. The lithographer, Raphael Clint published a small chart of the *Code of Sydney Signals*, whilst the *Sydney Herald* gave its subscribers a printed sheet of the new signals. The Almanack publishers, William Baker and James Tegg were also obliged to publish cards with the new code of signals numbers.

47. Figure 24 appeared in *The Sydney Morning Herald,* 1 January 1853. The Code of Signals is the same as previously appeared in the various almanacs, except for the Government Colonial Ship flag, which changed to a blue cross on white. This would appear to be an error, as a later chart continues to show the original white cross on blue and no record of a change occurring was located.

48. *The Sydney Morning Herald,* 6 April 1864 included a Notice to Mariners adding various ports in New Zealand.

49. The topmast of the flagstaff had broken off in a severe storm in January 1839, and this provided the opportunity to rebuild the mast higher. (*The Colonist,* 16 January 1839, page 4 and *Sydney Gazette*, 21 February 1839).

50. Figure 25 is photo of the Signal Station and a view of Sydney from the tower of Sydney Observatory, 1858. The photo is by William and James Freeman, published in *Panoramic Sydney,* Bookstall Co, 1920.

51. *The Sydney Morning Herald,* 17 July 1869, page 6. Figure 26 and information on the storm signals is from a chart published for the Sydney ship chandlers, Paul and Gray Ltd, circa 1901. Information on the weather would be conveyed from Sydney by electric telegraph.

52. *The Sydney Morning Herald,* 1 April 1912, page 10. The signal masts are believed to have been removed in the late 1930s.

53. *The Sydney Morning Herald,* 6 April 1912, page 16. It appears that the signal station continued to be manned and was not fully closed down until 1939.

54. Letter dated 25 August 1989 from John Vaughan to Director of Museum of Applied Arts & Sciences Trust (the formal entity operating the Powerhouse Museum) and reply dated 5 January 1990.

55. *Sydney Observatory: A conservation plan for the site and its structures,* James Semple Kerr, for Museum of Applied Arts and Sciences, December 1991 (and second revised edition in 2002). This conservation plan had been preceded by a draft plan prepared in 1987 by Schwager Brooks and Partners Pty Ltd for NSW Public Works and a Bachelor of Architecture thesis by Ashley Brown; *A Conservation Plan for Fort Phillip Signal Station,* University of Sydney, 1989.

56. Figure 28 is photo of Signal Station from tower of Sydney Observatory, 2012, http://sydney-open.hht.net.au/building/fort-phillip-signal-station. 2008 was the 150th anniversary of the Sydney Observatory, which has been part of the Powerhouse Museum since 1982 and a major heritage conservation project was undertaken on the Observatory and the Signal Station.

57. The Australian National Flag is at the top mast, and the cross-arms halyards display the New South Wales flag, the Aboriginal and Torres Strait Islander flags, John Vaughan's Greater Sydney Flag (or the Federation Flag) and a selection of the Nicholson descriptive flags, though these are no longer linked to specific shipping information. The planet flags are black with the standard planetary symbols for Mercury, Venus, Mars, Jupiter and Saturn and flags for eight phases of the moon. The restored flag mast is highly visible to motorists coming off the road deck of the Sydney Harbour Bridge. George Oxenbridge built the flag-mast from a red ironbark tree that grew near Grafton and topped with coastal grey box and it was funded by a substantial donation from the Bruce and Joy Reid Foundation of over $100,000. The late Bruce Reid was a philanthropic businessman whose charitable foundation paid for the purchase of the Bounty replica and made substantial donations to the Royal Flying Doctor Service, the NSW State Library and other charities. (*Sydney Morning Herald,* 24 May 2008)

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Biographical note

Ralph Kelly is an Australian vexillologist from Sydney married to Suzanne Kelly. He has presented papers at eight previous International Congresses based on his research into the history of Australian flags, his involvement in the Australian flag debate and a general interest in world flags. At the Berlin ICV he was made a Fellow of FIAV. Ralph is Treasurer and a former President of the Flag Society of Australia. He is a regular contributor of articles and illustrations for "Crux Australis" and is webmaster for the flagsaustralia.com.au website.

Ralph is the Chair of the Organising Committee for the 26th ICV to be held in Sydney in 2015. Ralph is also a Director of Ausflag where he provides a vexillological perspective on that entity's promotional and political lobbying for a new Australian national flag. By profession he is a former investment banker and is now a company director. He is currently a trustee director of the NSW state government's superannuation fund, First State Super.

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